STATE OF CALIFORNIA GEORGE DEUKMEJIAN, *Governor*

**CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD—
CENTRAL VALLEY REGION**

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21 February 1986

Mr. David Clark
California Division of Oil and Gas
4800 Stockdale Highway, Suite #417
Bakersfield, CA 93309

AQUIFER EXEMPTION, CLASS II WELL WATER DISPOSAL, OLCESE FORMATION, POSO CREEK OIL FIELD, KERN COUNTY

We have reviewed Berry Ventures proposal for an aquifer exemption of the Olcese Formation in the Poso Creek Oil Field. Our comments are contained in the enclosed memorandum.

We believe the discharger should be required to justify the proposed exemption using Federal Underground Injection Control Criteria and also show the injection will not degrade the potential beneficial uses of any ground water.

If you have any questions, please call Bill Pfister of this office at (209) 445-5504.

Sargeant J. Green

SARGEANT J. GREEN
Senior Land and
Water Use Analyst

WFP:sjb

Enclosure

Memorandum

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD • CENTRAL VALLEY REGION
3374 E. Shields Avenue, Room 18 Fresno, California 93726 Phone: (209) 445-5116

TO: Sargeant J. Green
Senior Land and
Water Use Analyst

FROM: William F. Pfister
Engineering Geologist

RECEIVED
FEB 24 1986
DIVISION OF OIL & GAS
BAKERSFIELD

DATE: 21 February 1986

SIGNATURE: William Pfister

SUBJECT: AQUIFER EXEMPTION, CLASS II WELL WATER DISPOSAL, BERRY VENTURES, POSO CREEK OIL FIELD, KERN COUNTY

Background

The California Division of Oil and Gas recently requested our comments on a proposed Class II well aquifer exemption of the Olcese Formation in the Poso Creek Oil Field. The depth of the top of the injection zone is 3215 feet.

Berry Ventures proposes to inject their produced water down their "New Hope" No. 1 well. If the aquifer exemption is granted, other injection wells will probably begin disposing of produced water into the Olcese Formation.

Oil production zones in the area of proposed injection reportedly are stratigraphically shallower and contain water of better quality than the Olcese Formation. Water analysis data indicates the injection fluid has 1188 mg/l T.D.S. and the Olcese Formation has 8130 mg/l T.D.S.

The proposed injection should upgrade the water quality of the Olcese Formation. However, if an aquifer exemption is granted, poorer quality produced water might also be injected into the Olcese.

Water Movement

The possible displacement of poor quality Olcese Formation water into areas of better water quality needs to be evaluated. Ground water in the San Joaquin Valley generally improves in quality toward the east, which suggests Olcese water quality may improve east of the Poso Creek Oil Field. Also, ground water in overlying formations is better quality than Olcese water. It needs to be shown that the injected water will not force the poor quality Olcese water vertically or laterally into zone(s) of better quality water being used or with potential beneficial uses.

The Poso Creek oil field is apparently "fault-bounded" on the east, with the faults acting as oil traps in some formations. This does not necessarily mean the faults are a barrier to ground water movement in the Olcese Formation. Additional information is needed to determine if the fault(s) act as a ground water barrier in the Olcese, if the prevention of eastward movement of water is considered necessary.

Potential Water Uses

We do not know of anyone currently using water from the Olcese Formation in the area of proposed injection. The poor water quality (8130 mg/l T.D.S.) and 3200 foot depth, as well as shallower better quality water, suggest Olcese water may not have a potential for benefical uses. However, water of this quality might be used for industrial or stock watering. Also, U. S. Environmental Protection Agency Underground Injection Control regulations include a definition that water containing fewer than 10,000 mg/l T.D.S. is considered a source of drinking water. Another factor to be considered is the State Water Resources Control Board's policy of nondegradation of the states waters.

Recommendations

To determine if this proposal would impact useable ground water, the discharger(s) should address the aquifer exemption criteria discussed in the Federal UIC regulations (40 CFR Section 146.4), and also address the above comments regarding Olcese water being displaced into better quality water and the possibility of the degradation of any beneficial uses.

I suggest we send the above comments to California Division of Oil and Gas.

WFP:sjb